

DTS-12 Turbidity Sensor

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Description

The DTS-12 is a turbidity and temperature sensor designed specifically to deliver high accuracy results from a sensor that can be easily field-deployed and requires very little maintenance.

The sensor features a 12-month recalibration interval and a built-in silicon wiper blade which helps minimize biofouling, helping to ensure accurate sampling from 0 to 1,600 NTU. The DTS-12 meets the quality standards of the USGS and has received their approval for in-situ turbidity monitoring.

Advanced Sensor Technology

In order to provide quality turbidity data, the DTS-12 takes 100 readings over five seconds, then computes and outputs the mean, variance, median, min, and max values. This statistical analysis compensates for entrained debris spikes and “cleans” the data, providing a precise measurement of bulk turbidity.

The DTS-12 uses Nephelometric geometry calculations to improve the signal-to-noise ratio by measuring the forward and back scattered light at a 90° angle to the light beam. Because of Nephelometry's sensitivity, precision and applicability over a wide particle size and turbidity range, it's the preferred method for measuring turbidity by the EPA.

The DTS-12 is simple to configure and use, offering a standard SDI-12 output for communication with data loggers or telemetry devices.

Benefits

- High-accuracy turbidity measurement
- Quick setup and deployment
- Low maintenance requirements
- Accurate even in shallow water

Features

- Silicon wiper blade keeps sensor clean from bio-fouling
- Requires maintenance only once per year
- SDI-12 output for connection to most data loggers and radios/modems
- High accuracy over entire measurement range
- 10-point factory calibration
- Built-in statistical analysis provides more accurate data

Applications

- Watersheds monitoring
- River monitoring
- Stream monitoring
- Shallow water applications
- Fish / marine life habitat monitoring
- Permit/discharge monitoring
- Stormwater runoff analysis

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- Water Level Sensors
- Water Quality Sensors
- Soil Moisture Sensors
- Chart Recorders
- Staff Gages
- Telemetry Systems
- Data Collection Platforms

Stevens QR Code



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Technical Specifications

Range

0 to 1,600 NTU (nominal)

Accuracy (Turbidity)

±2% (0-499 NTU @ 77 °F)
±4% (500-1,600 NTU @ 77 °F)

Zero offset: ±0.2 NTU

Resolution: 0.01 NTU

Accuracy (Temperature)

± 0.3 °F

Supply Voltage Range

9.6V to 16V

Power Consumption (typical)

Standby: 350 µA
Operating: 50 mA
Motor wiping: 100 mA

Cleaning Blade Wipe Time

5 seconds (nominal)

Depth Rating

98 ft. (30m)

Operating Temperature

+32 °F to +104 °F
(0 °C to +40 °C)

Communication Protocol

SDI-12, version 1.1

Measurements Returned

Instantaneous turbidity

The following are computed from 100 samples taken:

Mean
Variance
Median
Min
Max
Temperature

Sample Rate

20 Hz

Dimensions

Length: 12 in. (30.48cm)
Diameter: 2 in. (5.08cm)

Weight

23.3 oz (604g)

Cable Options

Fixed Cables:
Custom Lengths

Connectorized cables:
60 ft (18.3 m) / 100 ft (30.5 m)

ORDERING INFORMATION

Part #	Description
51154-001	DTS-12 Turbidity Sensor
51154-006	60 ft cable for DTS-12, with potted connector
51154-008	Replacement 60 ft cable for #51154-006, no connector
51154-005	100 ft cable for DTS-12, with potted connector
51154-009	Replacement 100 ft cable for #51154-005, no connector
51154-004	Custom length cable for DTS-12 (Needs End Cap #51154-003)
51154-003	End cap for custom cable
51154-002	Replacement wiper blade kit (includes blade, arm, and screw)
51154-007	Housing/Deployment Carousel for DTS-12